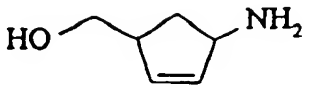
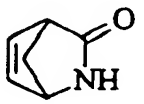
Patent Claims:

1. Process for the preparation of an aminoalcohol of the formula



I

in the form of the racemate or one of its optically active isomers, comprising the reduction of 2-azabicyclo-[2.2.1]hept-5-en-3-one of the formula



II

in the form of the racemate or one of its optically active isomers with a metal hydride.

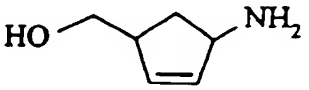
2. Process according to Claim 1, characterized in that the metal hydride used is a metal borohydride.

3. Process according to Patent Claim 1 or 2, characterized in that the reduction is carried out at a temperature of from -20 to 200°C.

4. Process according to at least one of Patent Claims 1 to 3, characterized in that the reduction is carried out in an aprotic or protic organic solvent or in a corresponding solvent mixture.

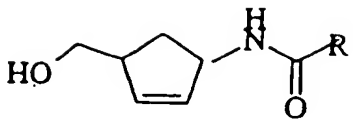
5. Process according to at least one of Patent Claims 1 to 4, characterized in that the reduction is carried out in the presence of water or a lower aliphatic alcohol.

6. Process for the preparation of an aminoalcohol of the formula



I

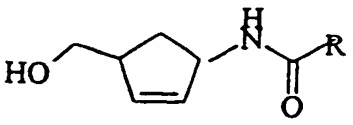
in the form of the racemate or one of its optically active isomers, comprising the hydrolysis of a cyclopentene derivative of the general formula



III

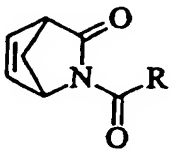
in the form of the racemate or one of its optically active isomers, in which R is C_{1-4}-alkyl, C_{1-4}-alkoxy, aryl or aryloxy, with an alkali metal hydroxide.

7. Process according to Patent Claim 6, characterized in that the cyclopentene derivative of the general formula



III

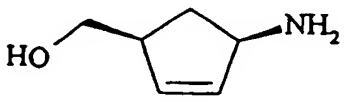
in the form of the racemate or one of its optically active isomers, in which R is as defined above, is prepared by reducing an acyl-2-azabicyclo[2.2.1]hept-5-en-3-one of the formula



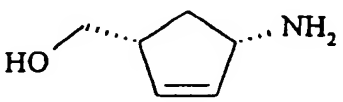
IV

in the form of the racemate or one of its optically active isomers, in which R is as defined above, with a metal hydride in an anhydrous solvent.

8. Process for the preparation of (1S,4R)- or (1R,4S)-1-amino-4-(hydroxymethyl)-2-cyclopentene of the formulae

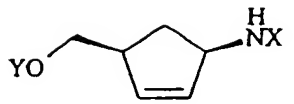


V

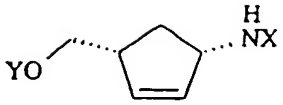


VI

or salts thereof and/or of (1S,4R)- or (1R,4S)-1-amino-4-(hydroxymethyl)-2-cyclopentene derivatives of the general formulae

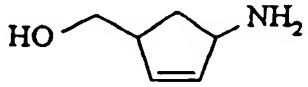


VII



VIII

or salts thereof, in which X and Y are identical or different and are an acyl group or H, with the exception of X = Y = H, comprising the racemate resolution of racemic aminoalcohol of the formula

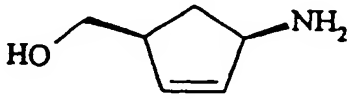


I

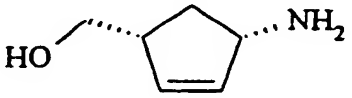
either by chemical means using an optically active tartaric acid or biotechnological means using a hydrolase in the presence of an acylating agent.

9. Process according to Patent Claim 8, characterized in that the biotechnological racemate resolution is carried out using a lipase, and the chemical racemate resolution using D-(-)- or L-(+)-tartaric acid.

10. Process for the preparation of (1S,4R)- or (1R,4S)-1-amino-4-(hydroxymethyl)-2-cyclopentene of the formulae

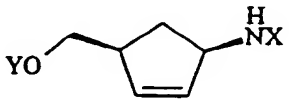


V

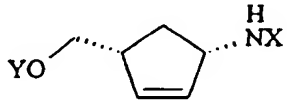


VI

or salts thereof, comprising the chemical hydrolysis of (1S,4R)- or (1R,4S)-1-amino-4-(hydroxymethyl)-2-cyclopentene derivatives of the general formulae



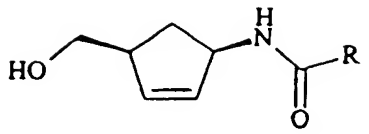
VII



VIII

in which X and Y are as defined above.

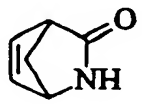
11. Process for the preparation of an (1R,4S)- or (1S,4R)-1-amino-4-(hydroxymethyl)-2-cyclopentene derivative of the general formulae



IX

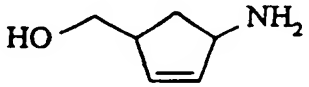
X

in which R is C_{1-4}-alkyl, C_{1-4}-alkoxy, aryl or aryloxy, characterized in that, in a first stage (±)-2-azabicyclo-[2.2.1]hept-5-en-3-one of the formula



II

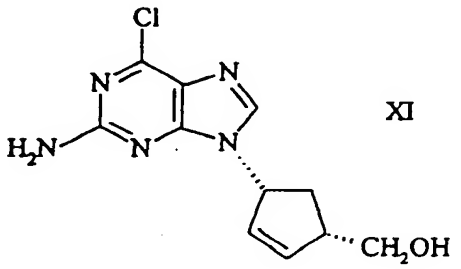
in the form of the racemate or one of its optically active isomers is reduced with a metal hydride into a racemic aminoalcohol of the formula



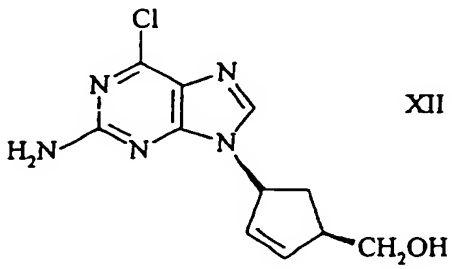
I

which, in a second stage, is converted by biotechnological means using a hydrolase in the presence of an acylating agent, or by chemical means using an optically active tartaric acid, into (1S,4R)- or (1R,4S)-1-amino-4-(hydroxymethyl)-2-cyclopentene of the formula V or VI, which is acylated to give products of the formula IX or X.

12. Process for the preparation of (1S,4R)- or (1R,4S)-4-(2-amino-6-chloro-9-H-purine-9-yl)-2-cyclopentenyl-1-methanol, or salts thereof, of the formulae

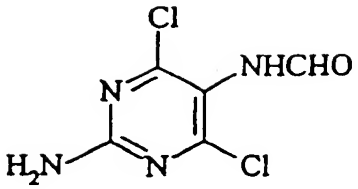


XI



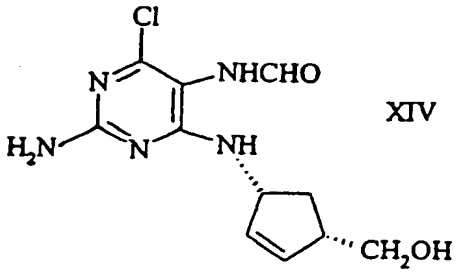
XII

characterized in that (1R,4S)- or (1S,4R)-1-amino-4-(hydroxymethyl)-2-cyclopentene D- or L-hydrogentartrate is reacted with N-(2-amino-4,6-dichloropyrimidin-5-yl)formamide of the formula

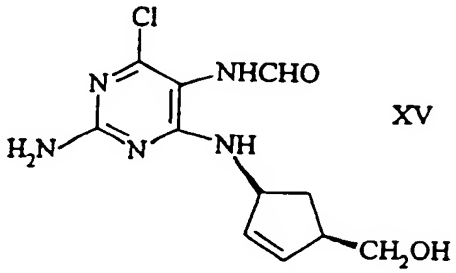


XIII

to give (1S,4R)-4-(1R,4S)-4-[(2-amino-6-chloro-5-formamido-4-pyrimidinyl)amino]-2-cyclopentenyl-1-methanol of the formulae



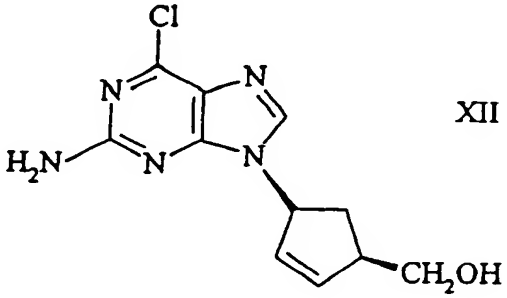
XIV



XV

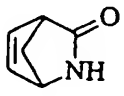
and the latter is then cyclized in a known manner to give compounds of formula XI or XII.

13. Process for the preparation of (1S,4R)-4-(2-amino-6-chloro-9-H-purine-9-yl)-2-cyclopentenyl-1-methanol, or salts thereof, of the formula

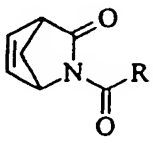


XII

characterized in that (-)-2-azabicyclo[2.2.1]hept-5-en-3-one or (-)-acyl-2-azabicyclo[2.2.1]hept-5-en-3-one of the formulae



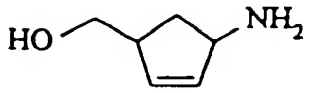
II



IV

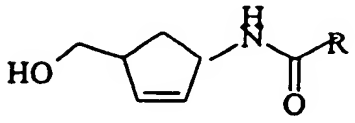
in which R is as defined above, is reduced with a metal

hydride to give an aminoalcohol of the formula



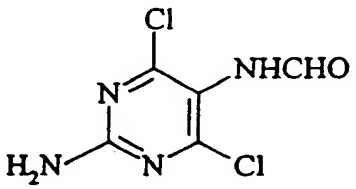
I

or to give a cyclopentene derivative of the general formula



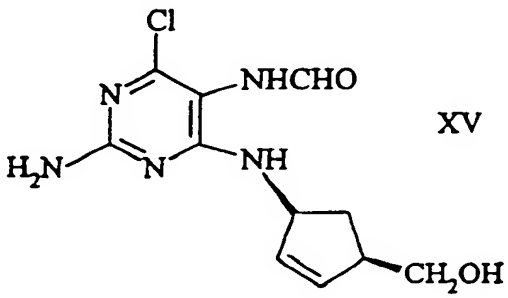
III

in which R is as defined above, which is then converted into the corresponding hydrohalide salts, then reacted with N-(2-amino-4,6-dichloropyrimidin-5-yl)formamide of the formula



XIII

to give (1S,4R)-4-[(2-amino-6-chloro-5-formamido-4-pyrimidinyl)amino]-2-cyclopentenyl-1-methanol of the formula



XV

and cyclizing the latter in a known manner to give the compounds of the formula XII.

14. (1R,4S)-1-Amino-4-(hydroxymethyl)-2-cyclopentene D- or L-hydrogentartrate.

15. (1S,4R)-1-Amino-4-(hydroxymethyl)-2-cyclopentene L- or D-hydrogentartrate.